CLAIMS:

What is claimed is:

1.   A method of assessing coronary risk based upon coronary calcification, comprising:

a.   scanning a region of interest in a patient using computed tomography (CT);

b.   storing CT generated data resulting from said scanning, the data comprising calcification data;

c.   analyzing the data to determine a distribution of calcification in the patient; and

d.   assessing the patient's risk of cardiovascular disease based upon said analyzing.

2.   The method of claim 1, wherein said scanning uses electron beam computed tomography (EBCT).

3.   The method of claim 1, wherein said scanning uses multiple detectors.

4.   The method of claim 1, wherein said scanning is performed on at least two slices of the patient's body.

5.   The method of claim 1, wherein said scanning is done with multisection spiral CT.

6.   The method of claim 1, wherein said storing comprises storing data for multiple pixels in the scanned region.

7.   The method of claim 6, wherein said analyzing comprises calculating energy attenuation for each pixel in the scanned region.

8.   The method of claim 7, wherein said calculating comprises calculating an x-ray attenuation coefficient CT number for each pixel that is above a predetermined threshold.

9.   The method of claim 8, wherein said predetermined threshold is 130 Hounsfield units.

10.   The method of claim 1, wherein said analyzing comprises at least one of (i) determining proximal and distal artery calcification, (ii) determining the distribution of calcification in multiple coronary branches of the scanned region, (iii) determining concentric and eccentric calcification, (iv) determining changes in calcification density, (v) determining the size of plaque in calcified areas, (vi) determining the shape of plaque in calcified areas, or (vii) determining the density of plaque in multiple calcified areas.

11.   The method of claim 10, further comprising using the determined changes in calcification density when assessing the patient's risk of cardiovascular disease by relating differing calcification densities in place to an outcome of a lesion.

12.   The method of claim 1, wherein said analyzing further comprises calculating a statistical characteristic of the data.

13.   The method of claim 12, wherein the calculating a statistical characteristic further comprises calculating at least one of (i) mean, (ii) median, (iii) mode, (iv) standard deviation, (v) range, (vi) coefficient of variation, (vii) skew, or (viii) kurtosis.

14.   The method of claim 12, further comprising using the data and the statistical characteristic to map a plurality of sections of a coronary artery as a function of calcification of each of the plurality of sections.

15.   The method of claim 14, wherein assessing the patient's risk of cardiovascular disease based upon said analyzing further comprises:

    a.   using the map to determine progression of plaque; and

    b.   using the determined plaque progression to categorize the patient's risk of cardiovascular disease.

16.   The method of claim 15, further comprising categorizing an area of abrupt change in regional coronary elasticity as a high-risk region.

17.   A method of assessing coronary risk based upon coronary calcification, comprising:

    a.   scanning a region of interest in a patient using computed tomography (CT);

    b.   storing CT generated data resulting from said scanning, the data comprising calcification data related to calcification of a blood vessel;

    c.   generating scoring data representative of a statistical distribution of calcification in the blood vessel using the calcification data; and

d.   assessing the patient's risk of cardiovascular disease using the scoring data.

18.   The method of claim 17, wherein said scanning uses at least one of (i) electron beam computed tomography (EBCT) or (ii) multiple detectors.

19.   The method of claim 17, wherein said scanning is performed on at least two slices of the patient's body.

20.   The method of claim 17, wherein said scanning is done with multisection spiral CT.

21.   The method of claim 17, wherein said storing comprises storing the CT generated data for multiple pixels in the scanned region.

22.   The method of claim 21, wherein said generating scoring data further comprises calculating energy attenuation for each pixel in the scanned region.

23.   The method of claim 22, wherein said calculating further comprises calculating an x-ray attenuation coefficient CT number for each pixel that is above a predetermined threshold.

24.   The method of claim 23, wherein said predetermined threshold is 130 Hounsfield units.

25.   The method of claim 17, wherein said generating scoring data further comprises at least one of (i) determining proximal and distal artery calcification, (ii) determining the distribution of

calcification in multiple coronary branches of the scanned region, (iii) determining concentric and eccentric calcification, (iv) determining changes in calcification density, (v) determining the size of plaque in calcified areas, (vi) determining the shape of plaque in calcified areas, or (vii) determining the density of plaque in multiple calcified areas.

26.   The method of claim 25, further comprising using the determined changes in calcification density when assessing the patient's risk of cardiovascular disease by relating differing calcification densities in place to an outcome of a lesion.

27.   The method of claim 17, wherein said statistical distribution further comprises at least one of (i) a mean, (ii) a median, (iii) a mode, (iv) a standard deviation, (v) a range, (vi) a coefficient of variation, (vii) skew, or (viii) kurtosis.

28.   The method of claim 27, further comprising using the CT generated data and the scoring data to map a plurality of sections of the blood vessel as a function of statistical distribution of calcification of each of the plurality of sections.

29.   The method of claim 28, wherein assessing the patient's risk of cardiovascular disease based upon said analyzing further comprises:

    a.   using the map to determine progression of plaque; and

    b.   using the determined plaque progression to categorize the patient's risk of cardiovascular disease.

30.	The method of claim 31, further comprising categorizing an area of abrupt change in regional coronary elasticity as a high-risk region.

31.	A system for assessing coronary risk based upon coronary calcification, comprising:

a.	a scanner adapted to detect a characteristic of a region of interest in a patient;

b.	a data store operatively coupled to the scanner and adapted to receive and store data generated by the scanner; and

c.	a data analyzer operatively coupled to the data store, wherein the data analyzer further comprises a scoring module adapted to determine distribution of the scanned characteristic of the region of interest in the patient.

32.	The system of claim 33, wherein the scanner comprises at least one of (i) a computed tomography (CT) scanner, (ii) an electron beam computed tomography (EBCT) scanner, or (iii) a multisection spiral CT.

33.	The system of claim 33, wherein the scanner comprises multiple detectors.

34.	The system of claim 33, wherein the characteristic of the region of interest in the patient is calcification of a blood vessel.